

REMARKS

The above-identified patent application has been amended and Applicants respectfully request the Examiner to reconsider and again examine the claims as amended.

Claims 5-8, 12, 13, 24-29, and 39-44 are pending in the application. Claims 2-18, 22, 24-34, and 38 are rejected. Claims 5-8, 12, 13, and 24-29 are amended herein. Claims 2-4, 8-11, 14-18, 22, 24, 25, 30-34, and 38 are cancelled herein without prejudice. Claims 1, 19-21, 23, and 35-37 were previously canceled. Claims 39-44 are new.

Claims Objections

The Examiner objects to Claims 11 and 12, asserting that the claims are “a substantial duplicate of Claim 9.” Claims 9 and 11 are canceled herein without prejudice. Therefore, the objection to Claims 11 and 12 is now moot.

The Rejections under 35 U.S.C. §112, Second Paragraph

The Examiner rejects Claim 11 under 35 U.S.C. §112, second paragraph. Claim 11 is canceled herein without prejudice. Therefore, the rejection of Claim 11 under 35 U.S.C. §112, second paragraph, is now moot.

The Rejections under 35 U.S.C. §103(a)

In View of Azuma et al.

The Examiner rejects Claims 9-10, 12-13, and 3-4 under 35 U.S.C. §103(a) as being unpatentable over Azuma et al. (article; Visualization Tools for Free Flight Air-Traffic Management) The Examiner asserts that Azuma has “icons [that] are specified to change hue with altitude... .”

As described above, independent Claims 3, 4, and 9-10 are canceled herein without prejudice.

As the Examiner is aware, and as found in MPEP §2142, in order to establish a prima facie case of obviousness "...the prior art reference (or prior art references when combined) must teach or suggest all the claim limitations."

Applicants submit that amended Claim 12 is patentably distinct over Azuma et al., since the cited reference neither describes nor suggests "... a processor adapted to receive ... altitude information...wherein the processor is further adapted to convert the altitude information to an icon having a shape that changes in response to the altitude information; and a display coupled to the processor, wherein the processor is further adapted to represent the icon on the display at a position on the display indicative of the latitude and the longitude, wherein the icon represented on the display has the shape, which is indicative of the altitude of the aircraft ...," as set forth in amended Claim 12.

With this arrangement, the icon can be represented, for example, as a circle, square, triangle, etc., wherein the shape is representative of altitude relative to a geographic reference. In the Office Action, the Examiner does not comment specifically about shape of an icon with regard to Azuma et al. Azuma et al. fails to describe or suggest the claimed arrangement. However, in relation to Claim 22, the Examiner asserts that the shape of the icon is changed, presumably in Hancock.

Hancock, for example, in FIG. 1, shows "traffic alert" symbols, e.g., item 30, which are associated with aircraft icons, e.g., item 28. According to Hancock, at column 3, lines 59-62, "[s]uperimposed on symbol 28 is symbol 30 which is a square which means **a resolution advisory** and has a color red which also indicates a resolution advisory of the aircraft represented by symbol 28." [emphasis added]

Applicants submit that the symbol (e.g., 28) of Hancock, which is representative of a so-called resolution advisory, is not the same as "...the icon represented on the display has the shape, which is indicative of the altitude of the aircraft relative to the geographic reference," as claimed. Applicants submit that a resolution advisory is indicative of a potential collision between aircraft.

For the same reasons, Applicants submit that amended Claim 13 is patentably distinct over Azuma et al., since the cited reference neither describes nor suggests "... receiving location information regarding the object, the location information including ... a third coordinate z, wherein the third coordinate z represents an altitude of the object relative to a geographic reference ...correlating the third coordinate z with a shape of the icon, wherein the icon shape changes in response to changes in the third coordinate z; and displaying the icon on the display, wherein the displayed icon has the shape that changes in response to changes in the third coordinate z..." as set forth in amended Claim 13.

In view of the above, Applicants submit that the rejection of Claims 9-10, 12-13, and 3-4 under 35 U.S.C. §103(a) over Azuma et al. should be removed.

Azuma et al. in View of Hancock

The Examiner rejects Claims 2, 5-8, 11, 14-18, 22, 24-34, and 38 under 35 U.S.C. §103(a) as being unpatentable over Azuma et al. in view of Hancock (U.S. Patent No. 5,179,377).

Claims 2, 11, 14-18, 22, and 24-25, 30-34, and 38 are canceled herein without prejudice. Claims 5-8 are amended herein to change dependency indirectly to Claim 12. Claims 26-29 are amended herein to change dependency indirectly to Claim 13.

For reasons discussed above in conjunction with Claim 12, Applicants submit that amended Claims 5-8 are patentably distinct over Azuma et al., whether taken alone or in

combination with Hancock, since the cited references neither describe nor suggest "... a processor adapted to receive ... altitude information...wherein the processor is further adapted to convert the altitude information to an icon having a shape that changes in response to the altitude information; and a display coupled to the processor, wherein the processor is further adapted to represent the icon on the display at a position on the display indicative of the latitude and the longitude, wherein the icon represented on the display has the shape, which is indicative of the altitude of the aircraft ...," as required by amended Claims 5-8.

As described above, Azuma et al. and Hancock et al. both fail to describe or suggest the claimed arrangement, for which icon shape is an indicator of altitude relative to a geographic reference.

Applicants submit that Claim 8 is further patentably distinct over Azuma et al., whether taken alone or in combination with Hancock, since the cited references neither describe nor suggest "... the size of the icon is inversely proportional to the third coordinate z, such that a larger value of the third coordinate z is represented on the display by a smaller size of the icon," as set forth in Claim 8.

With this arrangement, the icon, which can be representative of an aircraft, appears smaller on a display screen as its altitude increases. It should be recognized that this arrangement provides a natural view comparable to a view of an aircraft to a person on the ground. It will be appreciated that an air traffic controller who views an air traffic control display must make rapid decisions, and therefore, a most easily interpreted and natural display is critical for safe air control of aircraft. Neither Azuma et al. nor Hancock teach this type of view.

With regard to Claim 29, which has language similar to Claim 8 described above, the Examiner asserts that "...this is merely a matter of design choice..." Applicants respectfully disagree and submit that even small perceptual differences represented on an air traffic control display can be critical for improving air traffic safety.

For reasons discussed above in conjunction with Claim 13, Applicants submit that Claims 26-29 are patentably distinct over Azuma et al., whether taken alone or in combination with Hancock, since the cited references neither describe nor suggest "...receiving location information regarding the object, the location information including ... a third coordinate  $z$ , wherein the third coordinate  $z$  represents an altitude of the object relative to a geographic reference ...correlating the third coordinate  $z$  with a shape of the icon, wherein the icon shape changes in response to changes in the third coordinate  $z$ ; and displaying the icon on the display, wherein the displayed icon has the shape that changes in response to changes in the third coordinate  $z$ ..." as required by Claims 26-29.

For reasons discussed above in conjunction with Claim 8, Applicants submit that Claim 29 is further patentably distinct over Azuma et al., whether taken alone or in combination with Hancock, since the cited references neither describe nor suggest "...an inverse relationship between the size of the icon and the third coordinate  $z$ , such that a larger value of the third coordinate  $z$  results in a smaller size of the displayed icon," as set forth in Claim 29.

Furthermore, as the Examiner is aware, and as found in MPEP §2142, in order to establish a prima facie case of obviousness "...there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." Applicants respectfully submit that the Examiner has not met this burden in order to establish prima facie obviousness.

The present invention attempts to provide an easily readable aircraft altitude information to an air traffic controller. The Examiner combines Azuma et al., which provides a display of aircraft altitudes relative to the ground, with Hancock, which provides a display of aircraft altitudes relative to each other. Azuma et al. attempts to present easily readable aircraft altitude information to an air traffic controller, while Hancock attempts to present easily readable

relative aircraft altitude information to an aircraft pilot. Therefore, since the Azuma et al. and Hancock references are directed toward solutions to different problems, one of ordinary skill in the art and having Azuma et al., faced with the problems sought to be solved by the present invention, would not look to Hancock for a solution.

In view of the above, Applicants submit that the rejection of Claims 2, 5-8, 11, 14-18, 22, 24-34, and 38 under 35 U.S.C. §103(a) over Azuma et al. in view of Hancock should be removed.

Claims 39-44 are new in the application. Consideration of new Claims 39-44 is respectfully requested. Applicants submit that the additional combined features (namely size and color) of the displayed icon of Claims 12 and 13, which are described in new Claims 39-44 as well as in other dependent claims, are not contemplated by the cited art of record. The Examiner asserts that “[t]he Hancock reference teaches that it is advisable to have redundant coding (e.g. different color, size, and overlaid threat symbol).” However, the redundant coding of Hancock is associated with the above-described resolution advisory and not with an icon having a shape indicative of altitude relative to a geographic reference as claimed.

In view of the above Amendment and Remarks, Applicants submit that the claims and the entire case are in condition for allowance and should be sent to issue and such action is respectfully requested.

The Examiner is respectfully invited to telephone the undersigning attorney if there are any questions regarding this Amendment or this application.

The Assistant Commissioner is hereby authorized to charge payment of any additional fees associated with this communication or credit any overpayment to Deposit Account No. 500845, including but not limited to, any charges for extensions of time under 37 C.F.R. §1.136.

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Respectfully submitted,

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